

# Design and Development of High Gain AlGa<sub>N</sub> Avalanche Photodiode Arrays, Phase I

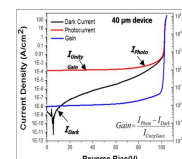
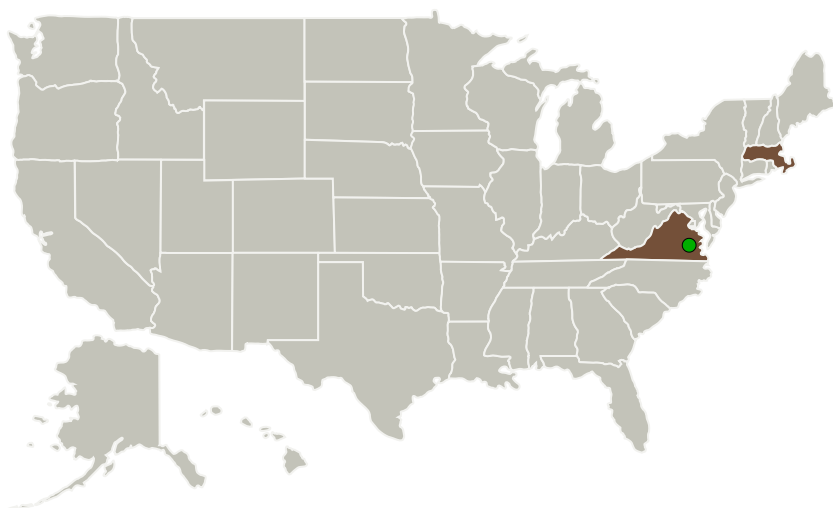
Completed Technology Project (2017 - 2017)



## Project Introduction

Future NASA missions that include Explorers, Discovery, Cosmic Origins, Vision Missions and Earth Sciences, and Planetary Science Missions will benefit from development of High Gain AlGa<sub>N</sub> UV APD Arrays. High resolution imaging in Ultraviolet (UV) band has a lot of potential applications for various NASA systems. UV band offers exciting opportunities for NASA systems as one can use short wavelength and various solar blind regions for high spatial resolution. As part of the proposed NASA Phase I SBIR program, Magnolia working with Professor Russell Dupuis of Georgia Tech will model, design and develop high performance with high gain GaN/AlGa<sub>N</sub> UVAPD's that can be implemented in future NASA missions.

## Primary U.S. Work Locations and Key Partners



Design and Development of High Gain AlGa<sub>N</sub> Avalanche Photodiode Arrays, Phase I Briefing Chart Image

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Organizations Performing Work	Role	Type	Location
Magnolia Optical Technologies, Inc.	Lead Organization	Industry Small Disadvantaged Business (SDB)	Woburn, Massachusetts
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

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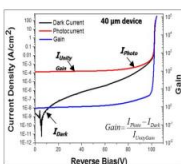


## Primary U.S. Work Locations

Massachusetts

Virginia

## Images



## Briefing Chart Image

Design and Development of High Gain AlGa<sub>N</sub> Avalanche Photodiode Arrays, Phase I Briefing Chart Image

(<https://techport.nasa.gov/image/135327>)

## Organizational Responsibility

## Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

## Lead Organization:

Magnolia Optical Technologies, Inc.

## Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

## Program Director:

Jason L Kessler

## Program Manager:

Carlos Torrez

## Principal Investigator:

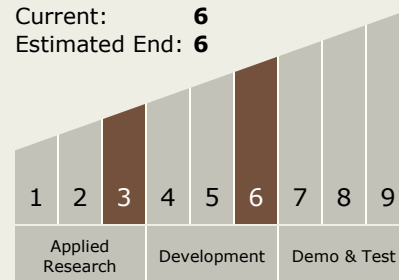
Ashok K Sood

## Technology Maturity (TRL)

Start: 3

Current: 6

Estimated End: 6



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## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.3 In-Situ Instruments and Sensors
    - └ TX08.3.1 Field and Particle Detectors